

**AGGREGATE SPECIFICATION LIMITS & SAMPLING AND TESTING GUIDE**

(See Specifications for Complete Details.)

April 15, 2003

Supersedes October 2, 2001

Matls. IM 209

Appendix C

TEST LIMITS April 2003	Spec #	F & T A	F & T C	LA Abrasion	Absorption	Chert	Shale	Clay Lumps	Plastic Index	Mortar Strength	Al ₂ O ₃ Limit	Pore Index	Gradation Number	Certified Inspection
Fine Aggregate for PCC													Gradations 1/1500	
PCC	4110.00						2			1.5			1	
<u>Note:</u> Maximum 40% between sieves If the gradation is 80% or less passing the #16 sieve and 50% or less passing the #30 sieve, no mortar strength is required. Annual test requiring mortar strength of 1.5 or greater and a fineness modulus of 2.75 or greater for continued approval.														
PCC, Class L	4111.00						2			1.3			1	1/1500
<u>Note:</u> Maximum 45% between sieves														
Mortar	4112.00						2			0.9			2	1/1500
<u>Note:</u> Shale + coal not to exceed 2%														
Coarse Aggregate for PCC														
Crushed Stone	4115.00													
<u>Note:</u> Chert particles are those retained on the 3/8" sieve, except for 4115.06, which uses the #4 sieve. <u>Note:</u> Chert refers to unsound chert on 3/8" sieve, which break into 3 or more pieces when subjected to freeze/thaw tests.														
-Structural		6		50		2	1	0.5			0.5		3-5	1/1500
-Nonstructural		6		50		3	1	0.5			0.5		3-5	1/1500
Gravel	4115.00													
-Structural		6		35		2	1	0.5					3-5	1/1500
-Nonstructural		6		35		3	1	0.5					3-5	1/1500
Deck Overlay	4115.06	4		40	2.5	0.5					0.4		6	1/1500
<u>Note:</u> Chert + shale + coal + iron not to exceed 1%.														
Class V Aggregate	4117.00	6		40			2 (+#16)			1.5			7	1/1500
<u>Note:</u> Coarse Aggregates as in 4115 (except abrasion) and Fine Aggregates as in 4110.00 and 4111.00														
Class V (Fine Limestone)	4117.03												8	1/1500
<u>Note:</u> Only from sources acceptable as coarse aggregate														

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Granular Surfacing															
Aggr. For Granular Shoulders	4120.02	Note: A gravel/limestone aggregate mixture may be allowed. See Specification 4120.02 for details.										Per 4120.02	1/3000		
Class C Gravel	4120.03	15				10		15					10	1/3000	
Note: Percent of Clay Lumps + particles passing #200 sieve not to exceed 15%.															
Class A Crushed Stone	4120.04	15		45			4						11	1/3000	
Note: For shoulders only; material with Al ₂ O ₃ not exceeding 0.7 or A-freeze not exceeding 10 may have an abrasion maximum of 55.															
Class B Crushed Stone	4120.05	20		55			4						11	1/3000	
Note: "C" Freeze + Abrasion not to exceed 65%															
Class D Crushed Stone	4120.06														1/3000
Note: "C" Freeze, Abrasion, and Gradation to be specified by Contract Documents.															
Paved Shoulders	4120.07	15		45			4						16	1/3000	
Fillets	Note: Material with Al ₂ O ₃ not exceeding 0.7 or A-freeze not exceeding 10 may have an abrasion maximum of 55.														
Granular Subbase															
	4121.00	25	50									1.5	12	1/3000	
Note: Combinations of crushed PCC, sand, gravel, or crushed stone may be used. Specification limits are for crushed stone or gravel.															
Crushed Stone-Base															
Macadam Stone	4122.02	10		45									13		
Note: Choke stone produced from Macadam has a Certified Inspection of 1/3000.															
(Visual)															

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Modified Subbase														
	4123.00		15	45							4.7(-#40)		14	1/3000
Note: Material with Al ₂ O ₃ not exceeding 0.7 (+4) or A-freeze not exceeding 10 may have an abrasion maximum of 55. Note: If gravel only, 75% of +3/8" must be crushed with a minimum of one fractured face.														
Cover Aggregate														
Cover Aggregate for Bituminous Seal Coats														
	4125.01A		10	40			5						1,19-21	1/1500
Note: Friction Type 4D or better, Shale on Sand Cover Aggregate shall not exceed 2%.														
Aggregate for Slurry Mixture														
	4125.01B	10		40			5				0.7		23	1/1500
Note: Friction Type 4 or better, sand equivalent of not less than 45.														
Aggregate for Type B HMA														
Type B														
Primary	4126.02	25	10	45	6.0						1.5		Per Form 955	1/1500
Non-Primary	4126.02	45	10	45	6.0						2.5		Per Form 955	1/1500
Composite Aggregate for HMA														
Type B	4126.04							4					Per Form 955	Per IM 204
Note: The fine portion of combined materials shall not exceed 5% shale retained on the #16 sieve.														
Coarse Aggregate for HMA														
Type A	4127.00	10		45	6.0			0.5			0.7		Per Form 955	1/1500
Fine Aggregate for HMA														
Type A	4127.03							0% on 1.5"					Per Form 955	1/1500
Note: Crushed fine aggregate shall be produced from sources meeting freeze/thaw and abrasion loss requirements for coarse Aggregates for ACC.														
Combination of Materials														
Type A	4127.05												Per Form 955	Per IM 204
Note: The fine portion of combined materials shall not exceed 2% shale retained on the #16 sieve.														

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Revetment Stone														
Class A	4130.02	10*	5**	50	(*Primary/**Non-primary)						0.7	25	Visual	
Class B	4130.03	10*	5**	50							0.7	25	Visual	
Class D	4130.04		10	50									Visual	
Class E	4130.04	10		50							0.7	25	Visual	
<u>Note: See Specification 4130.01 for bedding plane/concrete slab thickness requirements.</u>														
Erosion Stone	4130.05		15	50				5					Visual	
Porous Backfill														
	4131.00	10		45			5 (+#16)				0.7		29	1/1500
<u>Note: Material shall be free of visible clay and objectionable clay coating.</u>														
Special Backfill														
Crushed Stone/Concrete	4132.02												30,31	1/3000
Gravel	4132.03										10		31	1/3000
<u>Note: Carbon of no more than 1% on fraction passing the #40 sieve.</u>														
Granular Backfill														
	4133.00							4					32	1/3000
<u>Note: "C" Freeze and Abrasion requirements are equivalent to those of either 4120.04 or 4120.05.</u>														
Recycled PCC														
<u>Note: Recycled PCC must meet gradation and sampling frequency of the intended product.</u>														
Recycled Composite Pavement														
<u>Note: Recycled composite pavement must meet gradation and sampling frequency of the intended product.</u>														